

CLAIMS

1. A file processing device for recording a file which has a format in which a plurality of real data are allocated 5 and is formed of an real data block, in which the real data are integrated, and a management information block, in which a plurality of management information of the real data including at least information necessary to reproduce the real data allocated to the real data block are integrated in 10 a hierarchical structure, on a recording medium, wherein:

the real data block is recorded on the recording medium by intermittently reserving initial regions composed of free-space regions on the recording medium and recording management information of the initial regions regarding 15 allocation to the real data for managing each of the initial regions after the real data are recorded; and

the management information block is recorded on the recording medium by recording a lower hierarchical block of management information corresponding to each of the real 20 data and a lower hierarchical block composed of management information regarding the free-space regions in the initial regions which correspond to the above lower hierarchical block.

25 2. A file processing device according to claim 1,

wherein the initial regions are managed based on the management information of the initial regions regarding the allocation to the real data side and on the management information by the lower hierarchical block that belongs to 5 the initial regions.

3. A file processing device according to claim 3,
wherein:

desired data is recorded in the initial regions while 10 the initial regions are managed; and
the management information of the initial regions regarding the allocation to the real data side and the management information of the lower hierarchical block regarding the free-space regions are updated in response to 15 the record of the desired data as well as the lower hierarchical block corresponding to the record of the desired data is formed to the management information block.

4. A file processing device according to claim 3,
20 wherein whether or not other data can be further recorded in the initial regions is determined by managing the initial regions.

5. A file processing device according to claim 3,
25 wherein other data is further recorded in the initial

regions by managing the initial regions.

6. A file processing device according to claim 5,
wherein other data recorded in the initial regions is
5 recorded in the space regions of the initial regions.

7. A file processing device according to claim 5,
wherein other data recorded in the initial regions is
recorded by overwriting data recorded in the initial regions.

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8. A file processing device according to claim 3,
wherein whether or not data recorded in the initial regions
can be deleted is determined by managing the initial regions.

15 9. A file processing device according to claim 3,
wherein: the data recorded in the initial regions is deleted
from the real data block by managing the initial regions;
and

20 the management information of the initial regions
regarding the allocation to the real data side and the lower
hierarchical block of the management information regarding
the free-space regions are updated as well as a lower
hierarchical block of management information regarding the
delete is deleted in response to the delete.

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10. A file processing device according to claim 1,
wherein the initial regions are regions in which sound data
for post recording is recorded.

5 11. A file processing device according to claim 1,
wherein the management information have an identifier for
specifying data recorded in the initial regions.

10 12. A file processing device according to claim 1,
wherein the management information have information for
showing the number of files that refer to data recorded in
the initial regions.

15 13. A file processing device according to claim 1,
wherein the management information have information for
showing sizes of the space regions in the initial regions.

20 14. A file processing device for recording a file
which is formed of an real data block, in which a plurality
of real data are integrated, and a management information
block, in which a plurality of management information of the
real data including at least information necessary to
reproduce the real data allocated to the real data block are
integrated in a hierarchical structure, on a recording
25 medium, wherein the real data block is recorded on the

recording medium by sequentially, cyclically, and repeatedly recording the plurality of real data as well as by recording management information regarding allocation to the real data side for managing predetermined real data continuously
5 recorded on the recording medium.

15. A file processing device according to claim 14, wherein the management information is information for specifying the predetermined real data.

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16. A file processing method of recording a file which has a format in which a plurality of real data are allocated and is formed of an real data block, in which the real data are integrated, and a management information block, in which
15 a plurality of management information of the real data including at least information necessary to reproduce the real data allocated to the real data block are integrated in a hierarchical structure, on a recording medium, comprising:
recording the real data block on the recording medium
20 by intermittently reserving initial regions composed of free-space regions on the recording medium and recording management information of the initial regions regarding allocation to the real data for managing each of the initial regions after the real data are recorded; and
25 recording the management information block on the

recording medium by recording a lower hierarchical block of management information corresponding to each of the real data and a lower hierarchical block composed of management information regarding the free-space regions in the initial 5 regions which correspond to the above lower hierarchical block.

17. A file processing device according to claim 16, comprising:

10 recording desired data in the initial regions by managing the initial regions based on the management information of the initial regions regarding the allocation to the real data side and on the management information by the lower hierarchical block that belongs to the initial 15 regions; and

updating the management information of the initial regions regarding the allocation to the real data side and the management information of the lower hierarchical block regarding the free-space regions in response to the record 20 of the desired data as well as forming the lower hierarchical block corresponding to the record of the desired data to the management information block.

18. A file processing method of recording a file 25 formed of an real data block, in which a plurality of real

data are integrated, and a management information block, in which a plurality of management information of the real data including at least information necessary to reproduce the real data allocated to the real data block are integrated in 5 a hierarchical structure, on a recording medium, comprising recording the real data block on the recording medium by sequentially, cyclically, and repeatedly recording the plurality of real data as well as by recording management information regarding allocation to the real data side for 10 managing predetermined real data continuously recorded on the recording medium.

19. A program of a file processing method of recording a file which has a format in which a plurality of real data 15 are allocated and is formed of an real data block, in which the real data are integrated, and a management information block, in which a plurality of management information of the real data including at least information necessary to reproduce the real data allocated to the real data block are 20 integrated in a hierarchical structure, on a recording medium by causing a computer to carry out a predetermined processing procedure, wherein the processing procedure comprises:

a step of recording the real data block on the 25 recording medium by intermittently reserving initial regions

composed of free-space regions on the recording medium and recording management information of the initial regions regarding allocation to the real data for managing each of the initial regions after the real data are recorded; and

5 a step of recording the management information block on the recording medium by recording a lower hierarchical block of management information corresponding to each of the real data and a lower hierarchical block composed of management information regarding the free-space regions in the initial
10 regions which correspond to the above lower hierarchical block.

20. A program of a file processing method of recording a file formed of an real data block, in which a plurality of
15 real data are integrated, and a management information block, in which a plurality of management information of the real data including at least information necessary to reproduce the real data allocated to the real data block are integrated in a hierarchical structure, on a recording
20 medium by causing a computer to carry out a predetermined processing procedure, wherein the processing procedure comprises: a step of recording the real data block on the recording medium by sequentially, cyclically, and repeatedly recording the plurality of real data as well as by recording
25 management information regarding allocation to the real data

side for managing predetermined real data continuously recorded on the recording medium.

21. A recording medium having a program of a file processing method recorded thereon to record a file which has a format in which a plurality of real data are allocated and is formed of an real data block, in which the real data are integrated, and a management information block, in which a plurality of management information of the real data including at least information necessary to reproduce the real data allocated to the real data block are integrated in a hierarchical structure, on the recording medium by causing a computer to carry out a predetermined processing procedure, wherein the processing procedure comprises:
 - 15 a step of recording the real data block on the recording medium by intermittently reserving initial regions composed of free-space regions on the recording medium and recording management information of the initial regions regarding allocation to the real data for managing each of the initial regions after the real data are recorded; and
 - 20 a step of recording the management information block on the recording medium by recording a lower hierarchical block of management information corresponding to each of the real data and a lower hierarchical block composed of management information regarding the free-space regions in the initial

regions which correspond to the above lower hierarchical block.

22. A recording medium having a program of a file
5 processing method recorded thereon to record a file formed
of an real data block, in which a plurality of real data are
integrated, and a management information block, in which a
plurality of management information of the real data
including at least information necessary to reproduce the
10 real data allocated to the real data block are integrated in
a hierarchical structure, on the recording medium by causing
a computer to carry out a predetermined processing procedure,
wherein the processing procedure comprises a step of
recording the real data block on the recording medium by
15 sequentially, cyclically, and repeatedly recording the
plurality of real data as well as by recording management
information regarding allocation to the real data side for
managing predetermined real data continuously recorded on
the recording medium.

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23. An imaging device for recording real data composed
of video data and sound data obtained as a result of imaging
on a recording medium, wherein the real data composed of the
video data and the sound data are recorded on the recording
25 medium by:

recording an real data block in which the real data are integrated on the recording medium by intermittently reserving initial regions composed of free-space regions on the recording medium and recording management information of 5 the initial regions regarding allocation to the real data for managing each of the initial regions after the real data are recorded; and

subsequently recording a block, which has a hierarchical structure and includes management information 10 necessary to process the video data, the sound data, and the initial regions, on the recording medium by allocating management information, which corresponds the video data, the sound data, and the initial regions, respectively, to a lower hierarchical block.

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24. A recording medium having a file which is recorded thereon and formed of an real data block, in which a plurality of real data are integrated, and a management information block, in which a plurality of management 20 information of the real data including at least information necessary to reproduce the real data allocated to the real data block are integrated in a hierarchical structure, wherein the real data block is recorded on the recording medium by sequentially, cyclically, and repeatedly recording 25 the plurality of real data as well as by recording

management information regarding allocation to the real data side for managing predetermined real data continuously recorded on the recording medium.